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RAW SEQUENCE LISTING  
PATENT APPLICATION US/09/417,251

DATE: 10/22/1999  
TIME: 15:02:48

Input Set: I417251.RAW

This Raw Listing contains the General Information  
Section and up to first 5 pages.

ENTERED

1 <110> APPLICANT: Cahoon, Rebecca E.  
2 Miao, Guo-Hua  
3 Herrman, Rafael  
4 Rafalski, Antoni  
5 McCutchen, Bill F.  
6 <120> TITLE OF INVENTION: Plant Protein Disulfide Isomerases  
7 <130> FILE REFERENCE: BB1085 US NA  
8 <140> CURRENT APPLICATION NUMBER: US/09/417,251  
9 <141> CURRENT FILING DATE: 1999-10-13  
10 <150> EARLIER APPLICATION NUMBER: 60/049,408  
11 <151> EARLIER FILING DATE: 1998-10-15  
12 <160> NUMBER OF SEQ ID NOS: 20  
13 <170> SOFTWARE: Microsoft Office 97  
14 <210> SEQ ID NO 1  
15 <211> LENGTH: 504  
16 <212> TYPE: DNA  
17 <213> ORGANISM: Zea mays  
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19 <221> NAME/KEY: unsure  
20 <222> LOCATION: (463) ✓  
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32 gtcaaaaaga cagcccatca tgcaccacaa gaagatcgcc tgcagcttca tggctgctct 120  
33 ggctgcctat gcctctgctg ccgactcaga tggtcatcag ctaaccaagg acaccttcga 180  
34 ggagtttgtc aagtccaaca atctcgctct cgctgagttc tttgtccctt ggtgcggtca 240  
35 ctgcaaggcc ctgcgccccc agtacgagga ggccgccaca actctcaagg agaagaacat 300  
36 caagcttgcc aagattgact gcactgagga gtccgacctc tgcaaagacc agggcgctca 360  
37 gggttacccc accctcaagg tcttccgtgg tcttgacaat gtcactccct actctggcca 420  
38 gcgtaaggcc gctgggtatca ttctacatga ttaagagttc ctncccgng nttcatttta 480  
39 caaagggaac cctcgngggg ttaa 504  
40 <210> SEQ ID NO 2  
41 <211> LENGTH: 110  
42 <212> TYPE: PRT  
43 <213> ORGANISM: Zea mays  
44 <400> SEQUENCE: 2

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# RAW SEQUENCE LISTING PATENT APPLICATION US/09/417,251

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45      Met Ala Ala Leu Ala Ala Tyr Ala Ser Ala Ala Asp Ser Asp Val His
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47      Gln Leu Thr Lys Asp Thr Phe Glu Glu Phe Val Lys Ser Asn Asn Leu
48      20              25              30
49      Val Leu Ala Glu Phe Phe Ala Pro Trp Cys Gly His Cys Lys Ala Leu
50      35              40              45
51      Ala Pro Glu Tyr Glu Glu Ala Ala Thr Thr Leu Lys Glu Lys Asn Ile
52      50              55              60
53      Lys Leu Ala Lys Ile Asp Cys Thr Glu Glu Ser Asp Leu Cys Lys Asp
54      65              70              75              80
55      Gln Gly Val Glu Gly Tyr Pro Thr Leu Lys Val Phe Arg Gly Leu Asp
56      85              90              95
57      Asn Val Thr Pro Tyr Ser Gly Gln Arg Lys Ala Ala Gly Ile
58      100              105              110
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62      <213> ORGANISM: Glycine max
63      <220> FEATURE:
64      <221> NAME/KEY: unsure
65      <222> LOCATION: (503)
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68      ttatccacaa gctaataaaa ttactgaaga tgcattacgt gcacattttac aagggttatgt 120
69      tgatggtaca cttcaaccca ctgtcaaata tgaagaaatc ccagaaaaaac aagatgggtcc 180
70      agtttatgta ctctgtgggtg aaaattttga atccattgtt atggatgaaa ctaaagatgt 240
71      attagttgaa ttttatgcac catggtgtgg acattgtaaa acattagctc ccaaatacga 300
72      tgcattaggt gaatcattca agtcaaacc caatgtcatt attgccaga ttgatgccac 360
73      tgcaaatgat acccctgttg atattcaagg tttcccact attatctatt ggccagctaa 420
74      taataagaaa aatccaatta catatgaagg tgaacgtact gaatcagcac ttgtgcatt 480
75      tgtacgtgaa aaatgggtcaa caatt 505
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77      <211> LENGTH: 158
78      <212> TYPE: PRT
79      <213> ORGANISM: Glycine max
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83      Pro Gln Ala Asn Glu Ile Thr Glu Asp Ala Leu Arg Ala His Leu Gln
84      20              25              30
85      Gly Tyr Val Asp Gly Thr Leu Gln Pro Thr Val Lys Ser Glu Glu Ile
86      35              40              45
87      Pro Glu Lys Gln Asp Gly Pro Val Tyr Val Leu Val Gly Lys Asn Phe
88      50              55              60
89      Glu Ser Ile Val Met Asp Glu Thr Lys Asp Val Leu Val Glu Phe Tyr
90      65              70              75              80
91      Ala Pro Trp Cys Gly His Cys Lys Thr Leu Ala Pro Lys Tyr Asp Ala
92      85              90              95
93      Leu Gly Glu Ser Phe Lys Ser Asn Pro Asn Val Ile Ile Ala Lys Ile
94      100              105              110

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# RAW SEQUENCE LISTING PATENT APPLICATION US/09/417,251

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95      Asp Ala Thr Ala Asn Asp Thr Pro Val Asp Ile Gln Gly Phe Pro Thr
96              115                      120                      125
97      Ile Ile Tyr Trp Pro Ala Asn Asn Lys Lys Asn Pro Ile Thr Tyr Glu
98              130                      135                      140
99      Gly Glu Arg Thr Glu Ser Ala Leu Ala Ala Phe Val Arg Glu
100             145                      150                      155
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102 <211> LENGTH: 1692
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104 <213> ORGANISM: Zea mays
105 <400> SEQUENCE: 5
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108      cgtcgccgcg ggcgaggatt tcccacgcga cgggcgggtg atcgacctcg acgacagcaa      180
109      tttcgaggcg gcgctgggcg ccacgcactt tctcttcgct gacttctacg ccccttggtg      240
110      cggccactgc aagagacttg cgcgcgagtt agatgaagct gcaccggtgt tgtcagggtt      300
111      gagtgagcct attgttggtg ccaaagtcaa cgctgataaa tacagaaaac tcggatcaaa      360
112      atatggagtg gatgggttcc ctaccctcat gctctttatc catggtgttc caattgaata      420
113      cactgggttcg aggaaagctg accagcttgt cgcgaatctg aagaagttcg tttcgccaga      480
114      tgtttctatc cttgagtcag attctgcgat aaagaacttt gttgagaatg ctgggataag      540
115      ctttcgcgata ttccttggtt ttggggtgaa tgactcattg attgctgagt atggaaggaa      600
116      atacaagaaa agagcctggt ttgctgttgc taaagatttc tctgaggaca tcatggttagc      660
117      ctatgaattt gataaggttc cagcactagt tgctatccat ccaaagtata aggaacagag      720
118      tttgttctat ggcccatttg aagaaaattt cttagaagat tttgtacggc aatcccttct      780
119      ccctttggtt gtcccaatca atacagagac actaaaaatg ctgaatgatg atcagaggaa      840
120      agttgttctc acaatttttg aggatgattc agatgaaaac tctacgcaac tggtaaagat      900
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122      atgggatggg tttgtggaga cttttgatgt ttccaagagc tcacagctgc caaagctact      1020
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126      gctgtacatc cttatatattg tcacgcctct tctgtttgtc atggtgtact ttgctgggca      1260
127      agatgatact cctcagccaa gacgaattca cgaagagtga tgaaagcttg ttgggcttct      1320
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129      tcaactgacg caagtcgtga agagtgtttt tggcaatttg gccattcatg ctgagtttct      1440
130      tcaatctcta ttggcgacat caatttctgc atcctgccta tttgtgtttc tgctttgtgc      1500
131      ccttcaattt gttctttaat ttagagctta gaaattagcc tctgcctgtg tattctggaa      1560
132      cctgccattc cagagtccat ttctgtgaaa atatatttat tattatcata ctctgtctacc      1620
133      gagcttttgt acaattaata caggatatat agactgttct ggtgcacaaa aaaaaaaaga      1680
134      aaaaaaaaaa aa                                          1692
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136 <211> LENGTH: 418
137 <212> TYPE: PRT
138 <213> ORGANISM: Zea mays
139 <400> SEQUENCE: 6
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142      Leu Leu Leu Ser Leu Ser Ala Arg Asp Thr Val Ala Ala Gly Glu Asp
143              20                      25                      30
144      Phe Pro Arg Asp Gly Arg Val Ile Asp Leu Asp Asp Ser Asn Phe Glu

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**RAW SEQUENCE LISTING**  
**PATENT APPLICATION US/09/417,251**

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148	Trp	Cys	Gly	His	Cys	Lys	Arg	Leu	Ala
149		65				70			75
150	Pro	Val	Leu	Ser	Gly	Leu	Ser	Glu	Pro
151					85				90
152	Ala	Asp	Lys	Tyr	Arg	Lys	Leu	Gly	Ser
153					100				105
154	Pro	Thr	Leu	Met	Leu	Phe	Ile	His	Gly
155					115				120
156	Ser	Arg	Lys	Ala	Asp	Gln	Leu	Val	Arg
157					130				135
158	Pro	Asp	Val	Ser	Ile	Leu	Glu	Ser	Asp
159					145				150
160	Glu	Asn	Ala	Gly	Ile	Ser	Phe	Pro	Ile
161					165				170
162	Asp	Ser	Leu	Ile	Ala	Glu	Tyr	Gly	Arg
163					180				185
164	Phe	Ala	Val	Ala	Lys	Asp	Phe	Ser	Glu
165					195				200
166	Phe	Asp	Lys	Val	Pro	Ala	Leu	Val	Ala
167					210				215
168	Gln	Ser	Leu	Phe	Tyr	Gly	Pro	Phe	Glu
169					225				230
170	Val	Arg	Gln	Ser	Leu	Leu	Pro	Leu	Val
171					245				250
172	Leu	Lys	Met	Leu	Asn	Asp	Asp	Gln	Arg
173					260				265
174	Glu	Asp	Asp	Ser	Asp	Glu	Asn	Ser	Thr
175					275				280
176	Ser	Ala	Ala	Asn	Ala	Asn	Arg	Asp	Leu
177					290				295
178	Lys	Gln	Trp	Asp	Gly	Phe	Val	Glu	Thr
179					305				310
180	Gln	Leu	Pro	Lys	Leu	Leu	Val	Trp	Asp
181					325				330
182	Val	Asp	Gly	Ser	Glu	Arg	Leu	Glu	Glu
183					340				345
184	Ser	Gln	Phe	Leu	Glu	Gly	Tyr	Arg	Ala
185					355				360
186	Ile	Thr	Gly	Pro	Ser	Phe	Met	Gly	Phe
187					370				375
188	Asn	Ser	Leu	Tyr	Ile	Leu	Ile	Phe	Val
189					385				390
190	Val	Tyr	Phe	Ala	Gly	Gln	Asp	Asp	Thr
191					405				410
192	Glu	Glu							
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# RAW SEQUENCE LISTING PATENT APPLICATION US/09/417,251

DATE: 10/22/1999  
TIME: 15:02:48

Input Set: I417251.RAW

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196 <213> ORGANISM: Momordica charantia
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200      ggatgctgat cgggatgagt acaaggcgcc ggaggtggac gagaaggatg tcgtcgtgtt     180
201      gaaggagggt aacttcagcg atttcgtgga gaagaaccgg tttgttatgg tggagtttta     240
202      cgctccctgg tgtggtcact gccaggcgct ggcgccggag tatgctgctg ccgccactga     300
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206      acctggtatt tacaacataa cttcgggtgga agatgctgaa cgcatactga cttctgagac     540
207      taaagttggt cttggttacc tgaactcctt ggtgggccct gagagcaatg agcttgctgc     600
208      tgcttcaaga ctggaagatg atgtcaactt ttaccaaacy gtggatcctg aagtggccaa     660
209      gcttttccac attgaagctt cagcaaaacy cctgccttg gtattgctta agaaggaggc     720
210      tgaaaaactg aaccgctttg atggcgagtt ttctaagtct gcaattgctg aatttgtgtt     780
211      tgccaataag cttccattag ttacaaagtt tacgagagaa agcgcaccat tgattttcga     840
212      aagttcaatt aagaaacagt tgattctatt tgcgatttca aatgattcag agaaactaat     900
213      ccccatatth gaagagtcgt cgaagtctth taaaggaaag cttattttcg tttatgtgga     960
214      aattgacaat gaagatgttg gaaagccggt atcagaatac tttggcatta gtggcaatgg    1020
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218      agacaacttc gacaatattg ttttagatga atcgaaggat gttctcctcg agatctatgc    1260
219      tccttggtgt gggcattgcc aagcactgga accaacttat aacaagcttg ccaaacattt    1320
220      acgtggcatc gattcacttg tcattgctaa gatggatggc acaacaaatg aacatccccg    1380
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225      attgtgaaga cttcttaaat agttttgtaa gttattatcc catcttttat gcactttttg    1680
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227      cctttttctt taggaaaaaa aaaaaaaaaa aaaa                                1774
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230 <212> TYPE: PRT
231 <213> ORGANISM: Momordica charantia
232 <400> SEQUENCE: 8
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235      Pro Asp Phe Asp Gly Phe Glu Gly Gly Ala Glu Asp Glu Asp Phe Gly
236      20              25              30
237      Asp Phe Ser Asp Phe Glu Asp Ser Asp Ala Asp Arg Asp Glu Tyr Lys
238      35              40              45
239      Ala Pro Glu Val Asp Glu Lys Asp Val Val Val Leu Lys Glu Gly Asn
240      50              55              60
241      Phe Ser Asp Phe Val Glu Lys Asn Arg Phe Val Met Val Glu Phe Tyr
242      65              70              75              80
243      Ala Pro Trp Cys Gly His Cys Gln Ala Leu Ala Pro Glu Tyr Ala Ala
244      85              90              95

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VERIFICATION SUMMARY  
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DATE: 10/22/1999  
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Input Set: I417251.RAW

Line ? Error/Warning

Original Text

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39 W "N" or "Xaa" used: Feature required

caaaggggaac cctcgnggggt ttaa

75 W "N" or "Xaa" used: Feature required

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